IN THE SPECIFICATION:

The Applicants hereby amend the paragraph on page 2, beginning on line 2 of the specification as follows:

U.S. Patent 4,539,526 discloses an adaptive signal weighting system for encoding and decoding a data signal. The technique disclosed therein preemphasizes only the high frequency signal components during encoding as a function of the spectral energy contained in the high frequency portion of the signal. On the decoder side the received signal is deemphasized in a complementary manner by providing a gain to the high frequency signal components based upon the spectral energy within the high frequency portion of the spectrum of the received signal. One problem with this technique is that it controls the amount of preemphasis/deemphasis based upon the spectrum of only the high frequency components.

The Applicants hereby amend the paragraph on starting on page 2, line 20 and spanning to page 3, line 4 of the specification as follows:

In one embodiment, the frequency detector includes a variable notch filter that receives and filters the input signal and provides a notch filtered signal value, wherein the notch filter includes a notch set as a function of the variable gain control signal. A mixer receives and mixes the notch filtered signal value and a value indicative of the input signal, and provides a mixed signal indicative thereof to an integrator, which integrates the mixed signal to provide the variable gain control signal.

The Applicants hereby amend the paragraph on starting on page 5, line 5 of the specification as follows:

According to an aspect of the present invention, the decoder 20 includes the frequency detector 38 that provides the control signal on the line 42. FIG. 3 is a block diagram illustration of the frequency detector 38. In this digital embodiment, the frequency detector 38 includes a notch filter 50 and a delay 52 that each receive the first bandpassed signal on the line 18. The notch filter 50 provides a notch filtered output signal on a line 54 to a mixer 56, which also receives, on a line 58, a delayed version of the input signal. The mixer 56 mixes the signals on the lines 54, 58 and provides a mixed signal on a line 60. A multiplier 62 multiplies the mixed signal on the line 60 with a time constant value τ, and the resultant product is provided on a line 64. A summer 66 then sums the past value of a control value C_n with the signal value on the line 64. As a result, the control value C_n on the line 42 can be expressed as:

$$C_n = C_{n-1} + (Q * \tau) \qquad \text{EQ. 1}$$

where Q is equal to the signal on the line 60~~58~~.

The Applicants hereby amend the paragraph on starting on page 7, line 17 of the specification as follows:

FIG. 4 is an alternative embodiment mean frequency detector 70. This embodiment includes a variable low pass filter 72 having an adjustable corner frequency. This filter 72 provides a low pass filtered signal on a line 74 to a gain function 76 having a value of two and the resultant amplified signal is provided to a first absolute value unit 77~~76~~ that provides a first absolute value signal on a line 78. A second absolute value unit 80 receives the input signal on the line 18, and provides a second absolute value signal on a line 82. A comparator 84 receives the first and second absolute value signals, and provides an output signal on a line 86 indicative of the difference between the signals. Specifically, if the value on the line 82 is greater than the value on the line 78, then the comparator 84 provides an output signal on the line 86 to increase the value of the corner frequency of the low pass filter 72. The signal on the line 86 may be input to a low pass filter 88 to smooth the signal prior to providing it to the low pass filter 72 to set the corner frequency thereof. Similarly, if the value on the line 82 is less than the value on the line 78, then the comparator 84 provides an output signal on the line 86 to decrease the value of the corner frequency of the low pass filter 72. In general, the value of the signal on the line 86 is driven such that the corner frequency of the low pass filter 72~~6~~ is set to the one-half energy point of the signal on the line 18. That is, if the signal values on the lines 78 and 82 are equal, then the output value of the low pass filter 72 is one-half the value of the input signal on the line 18. As the input signal on the line 18 changes, the mean frequency detector 70 tracks the change to shift the corner frequency of the low pass filter 72 such that the value of the signals on the lines 78 and 82 are equal.